



PATENT APPLICATION  
PO-7827  
LeA 36,408

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICATION OF	)	
HERBERT EICHENAUER ET AL	)	GROUP NO.: 1711
SERIAL NUMBER: 10/721,127	)	
FILED: NOVEMBER 25, 2003	)	EXAMINER: J. MULLIS
TITLE: IMPACT-MODIFIED BLENDS	)	

**LETTER**


Mail Stop - Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 2231-1450

Sir:

Enclosed herewith is an Appeal Brief in the matter of the subject Appeal.  
Please charge the fee for filing the Brief, \$500.00, to our Deposit Account Number  
13-3848 .

Respectfully submitted

By

  
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Alexandria, VA 22313-1450 7/27/06

Date

Aron Preis, Reg. No. 29,426

Name of applicant, assignee or Registered Representative

  
Signature

July 27, 2006

Date



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)  
) GROUP NO.: 1711  
)  
)  
) EXAMINER: JEFFREY C. MULLIS  
)  
) RESPONSE TO PAPER NO.  
) 20060106  
)  
)

**APPEAL BRIEF**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450  
Sir:

This Brief is an appeal from the Final Office Action of the Examiner dated January 10, 2006 in which the rejection of Claims 1-25 was maintained.

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**I. REAL PARTY IN INTEREST**

The real party in interest is Bayer MaterialScience AG.

**II. RELATED APPEALS AND INTERFERENCES**

There are no other related appeals or interferences known to Appellants, Appellants' legal representative, or Appellants' assignee, which will directly affect or be directly affected by or have a bearing on the Board's Decision in this pending appeal.

**III. STATUS OF CLAIMS**

Claims Pending:	1-25
Claims Canceled:	None
Claims Allowed:	None
Claims Withdrawn from Consideration:	None
Claims Appealed:	1-25

**IV. STATUS OF AMENDMENTS**

No amendment has been filed subsequent to the outstanding final rejection.

**V. SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention is directed to a thermoplastic molding composition comprising: (A) at least one polymeric resin selected from the group consisting of

polycarbonate, polyester carbonate, polyamide, polyalkylene terephthalate and polyoxymethylene; and

(B) a co-precipitated mixture of,

(i) a graft polymer B.1 that is prepared by means of a redox initiation system consisting of, an oxidizing agent and a reducing agent and

- (ii) a graft copolymer B.2 that is prepared by means of an initiation system consisting of persulfate compounds.

The oxidizing agent entailed in the preparation of B.1 is at least one member selected from the group consisting of di-tert.-butyl peroxide, cumene hydroperoxide, dicyclohexyl percarbonate, tert.-butyl hydroperoxide, p-menthane hydroperoxide and H<sub>2</sub>O<sub>2</sub>.

The reducing agent entailed in the preparation of B.1 is at least one member selected from the group consisting of salts of sulfinic acid, salts of sulfurous acid, ascorbic acid, and salts of ascorbic acid, sodium formaldehyde sulfoxylate, mono-hydroxyacetone, di-hydroxyacetone, sugars, iron(II) salts, tin(II) salts and titanium(III) salts.

#### **VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

(I) Claims 1-25 stand rejected under 35 U.S.C. § 103(a) as being obvious over United States Patent No. 5,276,092 (herein Kempner) in view of WO 00/06648 (herein Van der Helder).

#### **VII. ARGUMENT**

##### **(I) CLAIMS 1-25 ARE NOT RENDERED OBVIOUS UNDER 35 U.S.C. § 103(a) OVER KEMPNER IN VIEW OF VAN DER HELDER.**

Kempner disclose a composition containing two core/shell products. The initiators used in the referenced emulsion polymerization of these products are said by Kempner (col. 7 line 10 et seq.) to include

"persulfates, persters, hydroperoxides, peracids, azo compounds and the like, and some or all of the initiators may be combined with activators to form "redox" pairs . Such activators include sodium formaldehyde, sulfoxylate, sodium metabisulfite, sodium hydrosulfite, and the like"

No criticality relative to the compositional makeup of the initiator system is disclosed or suggested, and nothing in the reference point to any advantage attributed to one initiator over the others nor to the advantageous performance attained upon the combination of initiators, key to the present invention.

Van Der Helder has been cited, in accordance with the Examiner, for its disclosure of specific flame retardants such as are recited in Claims 6 and 7.

Appellants call attention to the experimental section of the application- pages 27 et seq. where the advantageous surface properties of the inventive composition are shown to critically depend on the claimed initiator systems. The table below is an extract of the results included the application in pages 27 et seq.

The exemplified compositions contained identical amounts of polycarbonate, and differed one from the others primarily in terms of the initiator systems used in the preparation of their respective graft polymers.

Graft polymers	1	2	3	4	5	6
B.1.1 Tert.-butyl hydroperoxide and sodium ascorbate initiated	—	—	—	24.0		
B.2.1 potassium peroxodisulfate initiated- 40 pbw SAN	—	—	—		24.8	
B.2.2 potassium peroxodisulfate initiated- 40 pbw SAN	—	—	—			19.2
Co-precipitated B.1.1/B.2.1 (75/25)	24.2	--	--	--	--	--
Co-precipitated B.1.1/B.2.1 (50:50)	—	24.4	—	—	—	—
Co-precipitated B.1.1/B.2.2 (75/25)	—	—	22.6	—	—	—
SAN	32.8	32.6	34.4	33	32.2	37.8
Surface appearance	++	+	+	--	0	-

All the compositions included conventional additives having no criticality to the inventive composition.

The surface appearance – discussed in page 31 of the application- of the inventive compositions (Examples 1,2 and 3) are very good (++) and good (+) whereas the surfaces of the corresponding compositions the included grafts of which were differently initiated show very poor (--), moderate (0) and poor (-) surface appearances respectively for examples 4,5 and 6. Corresponding and consistent data is shown in tables 2 and 3 (application pages 34 and 35).

Clearly, the inventive combination of initiators that characterize the inventive compositions (Examples 1,2 and 3) shown to affect the superior surface quality of the composition has not been described or suggested by the cited art.

In view of the remarks herein, Appellants' respectfully submit that their claimed thermoplastic molding composition is not described, taught or fairly suggested by Kempner et al in view of Van der Helder. Thus, Appellants respectfully request that the Board of Appeals reverse the decision of the Examiner, and remand the application for allowance of Claims 1-25 and issuance of a patent.

Respectfully submitted,

By



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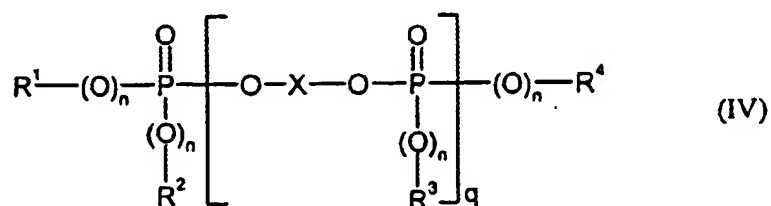
## **VIII. CLAIMS APPENDIX**

1. A thermoplastic molding composition comprising:
  - (A) at least one polymeric resin selected from the group consisting of polycarbonate, polyester carbonate, polyamide, polyalkylene terephthalate and polyoxymethylene; and
  - (B) a co-precipitated mixture of,
    - (i) a graft polymer B.1 that is prepared by means of a redox initiation system consisting of, an oxidizing agent selected from the group consisting of di-tert.-butyl peroxide, cumene hydroperoxide, dicyclohexyl percarbonate, tert.-butyl hydroperoxide, p-menthane hydroperoxide, H<sub>2</sub>O<sub>2</sub> and combinations thereof, and a reducing agent selected from the group consisting of salts of sulfinic acid, salts of sulfurous acid, ascorbic acid, and salts of ascorbic acid, sodium formaldehyde sulfoxylate, mono-hydroxyacetone, di-hydroxyacetone, sugars, iron(II) salts, tin(II) salts, titanium(III) salts and combinations thereof, and
    - (ii) a graft copolymer B.2 that is prepared by means of an initiation system consisting of persulfate compounds.
2. The composition according to Claim 1 comprising 10 to 99.5 parts by weight of component A) and 0.5 to 90 parts by weight of component B).
3. The composition according to Claim 2 further comprising at least one flameproofing agent.
4. The composition according to Claim 1 further comprising at least one fluorinated polyolefin.

5. The composition according to Claim 1 further comprising at least one vinyl (co)polymer, B.3.

6. The composition according to Claim 3 wherein the flameproofing agent is selected from the group consisting of monomeric and oligomeric phosphorus compounds.

7. The composition according to Claim 6 wherein the phosphorus compounds conform to formula



wherein

$\text{R}^1$ ,  $\text{R}^2$ ,  $\text{R}^3$  and  $\text{R}^4$  independently one of the others represents a member selected from the group consisting of  $\text{C}_1$ - to  $\text{C}_8$ -alkyl,  $\text{C}_5$ - to  $\text{C}_6$ -cycloalkyl,  $\text{C}_6$ - to  $\text{C}_{20}$ -aryl and  $\text{C}_7$ - to  $\text{C}_{12}$ -aralkyl,

$n$  independently one of the others is 0 or 1,

$q$  is 0 to 30, and

$\text{X}$  is a mono- or poly-nuclear aromatic radical having 6 to 30 carbon atoms, or a linear or branched aliphatic radical having from 2 to 30 carbon atoms.

8. The composition according to Claim 5 wherein the vinyl (co)polymer is the product of polymerization of at least one monomer selected from the group consisting of vinyl aromatic compounds, vinyl cyanides, (meth)acrylic acid ( $\text{C}_1$ - $\text{C}_8$ )-alkyl esters, unsaturated carboxylic acids and derivatives of unsaturated carboxylic acids.

9. The composition according to Claim 8 wherein the vinyl (co)polymer is a product of polymerization of from 50 to 99 parts by weight of at least one monomer selected from the group consisting of vinyl aromatic compounds and (meth)acrylic acid (C<sub>1</sub>-C<sub>8</sub>)-alkyl esters and 1 to 50 parts by weight of at least one monomer selected from the group consisting of vinyl cyanides and (meth)acrylic acid (C<sub>1</sub>-C<sub>8</sub>)-alkyl esters.

10. The composition according to Claim 1 wherein the polymeric resin is selected from the group consisting of polycarbonate and polyamide.

11. The composition according to Claim 1 wherein the graft polymer B.1 and graft polymer B.2 are each the product of polymerizations of

- i) from 5 to 95 wt.% of at least one vinyl monomer with
- ii) from 95 to 5 wt.% of one or more graft bases having glass transition temperatures < 10°C.

12. The composition according to Claim 11, wherein i) is a mixture of

- i1) from 50 to 99 parts by weight of at least one monomer selected from a first group consisting of vinyl aromatic compounds, vinyl aromatic compounds substituted on the ring, and (meth)acrylic acid (C<sub>1</sub>-C<sub>8</sub>)-alkyl esters, and
- i2) from 1 to 50 parts by weight of at least one monomer selected from a second group consisting of vinyl cyanides, (meth)acrylic acid (C<sub>1</sub>-C<sub>8</sub>)-alkyl esters and derivatives of unsaturated carboxylic acids.

13. The composition according to Claim 12, wherein said first group consists of styrene,  $\alpha$ -methylstyrene and methyl methacrylate, and said second group consists of acrylonitrile, maleic anhydride and methyl methacrylate.

14. The composition according to Claim 11, wherein the graft base is selected from the group consisting of diene rubbers, EP(D)M rubbers and acrylate rubbers.

15. The composition according to Claim 14, wherein the graft base is selected from the group consisting of polybutadiene and butadiene/styrene copolymer.

16. The composition according to Claim 1, wherein the ratio by weight of graft polymer B.1:B.2 is 95:5 to 5:95.

17. The composition according to Claim 16, wherein the ratio is 90:10 to 25:75.

18. The composition according to Claim 17, wherein the ratio is 85:15 to 50:50.

19. The composition according to Claim 5 wherein B and B.3 relate by weight as 90:10 to 10:90.

20. The composition according to Claim 19 wherein the ratio by weight of B:B.3 is 80:20 to 30:70.

21. The composition according to Claim 3 wherein flame proofing agent is present in an amount of 0 to 20 parts by weight.

22. The compositions according to Claim 1 comprising 20 to 98.5 parts by weight of A) and 1.5 to 80 parts by weight of B).

23. The composition according to Claim 22 containing 30 to 98 parts by weight of A) and 2 to 70 parts by weight of B).

24. The compositions according to Claim 1 further comprising at least one polymer additive selected from the group consisting of lubricants, mold-release agents, nucleating agents, antistatics, stabilizers, fillers, reinforcing materials, colorants and pigments.

25. A molded article comprising the composition of Claim 1.

## **IX. EVIDENCE APPENDIX**

No evidence has been: (i) submitted by Appellants in the present case pursuant to 37 C.F.R. §§ 1.130, 1.131 or 1.132; or (ii) entered by the Examiner and relied upon by Appellants.

**X. RELATED PROCEEDINGS APPENDIX**

There are no other related appeals or interferences known to Appellants, Appellants' legal representative, or Appellants' assignee, which will directly affect or be directly affected by or have a bearing on the Board's Decision in this pending Appeal.